

WHAT IS CLAIMED IS:

1. A voltage regulator for controlling output voltage of an automotive alternator, the voltage regulator comprising:

a switching transistor for controlling excitation current supplied to a field coil of the alternator in an ON-OFF fashion;

a voltage control circuit for controlling the switching transistor to maintain output voltage of the alternator at a predetermined level; and

a detector circuit for detecting disconnection in a circuit for charging an on-board battery with the output voltage of the alternator, the detector circuit detecting the disconnection based on a voltage difference between the output voltage of the alternator detected when the switching transistor is turned off and the output voltage of the alternator detected when the switching transistor is turned on.

2. The voltage regulator as in claim 1, wherein:

the detector circuit determines that the disconnection in the charging circuit exists when the voltage difference exceeds a predetermined value.

3. The voltage regulator as in claim 1, further comprising means for generating a warning signal when the disconnection in the charging circuit is detected.

4. The voltage regulator as in claim 2, further comprising means for generating a warning signal when the disconnection in the charging circuit is detected.